

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
14 October 2004 (14.10.2004)

PCT

(10) International Publication Number  
**WO 2004/088006 A1**

(51) International Patent Classification<sup>7</sup>: **D01B 1/16, 1/28**

(21) International Application Number:  
PCT/AU2004/000402

(22) International Filing Date: 30 March 2004 (30.03.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
2003901752 30 March 2003 (30.03.2003) AU

(71) Applicant (for all designated States except US): **FIBRE LABORATORY PTY LTD** [AU/AU]; 20 Albert Street, Blackburn, Victoria 3130 (AU).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **CLARKE, Adrian, Francis, K.** [AU/AU]; 5 Bickleigh Court, Croydon Hills, VIC 3136 (AU). **DENNIS, Hamish, Gray, Seymour** [NZ/AU]; 5 Wakefield Court, Point Cook, Victoria 3030 (AU). **WILLIAMES, Geoff** [AU/AU]; Williames Hi Tech International Pty Ltd, Wills Street, Warragul, VIC 3820

(AU). **CLARKE, Adrian, Ward** [AU/AU]; 1/8 Rupert Street, Mitcham, VIC 3132 (AU). **FOX, Craig** [AU/AU]; C/- Williames Hi Tech International Pty. Ltd, Wills Street, Warragul, VIC 3820 (AU).

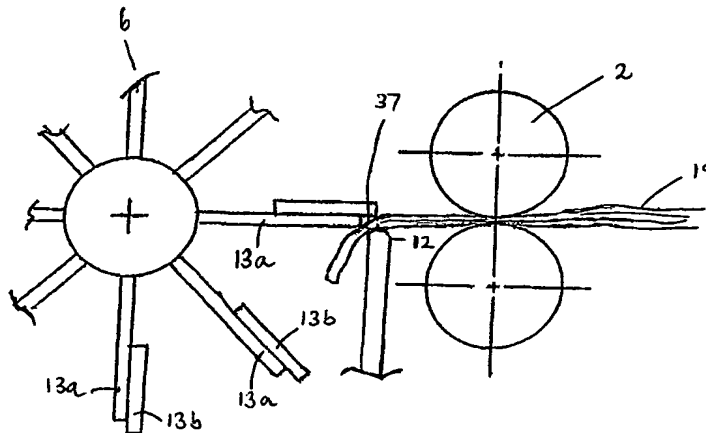
(74) Agent: **FB RICE & CO**; 139 Rathdowne Street, Carlton South, Victoria 3053 (AU).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK,

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR PROCESSING OF PLANT MATERIAL



(57) Abstract: The present invention provides a method for processing plant stalk having a fibrous outer part (skin) and an inner hurd, the method including the steps of: striking the stalk at at least one location along the stalk length so as to cause the stalk to bend at the at least one location thereby causing fracture of the hurd across the stalk at each striking location so as to expose at least part of the inner hurd; and separating at least part of the hurd from the skin. The present invention also provides an apparatus for processing stalk having a fibrous outer part and an inner hurd comprising: a feeder (2) for feeding the stalks for processing; a decorticator for decorticating the fed stalks comprising: a bending element (12) to which the stalks are fed at a predetermined speed; a striking means (13) that cause each stalk to bend over the bending element (12) and to thereby fracture the hurd across the stalk and/or longitudinally split the skin at various locations along the stalk length, wherein the striking means (13) further serves to separate the hurd from the fibrous outer part of the stalk. The present invention also provides fibres and hurd produced by the methods and apparatus of the present invention.



TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*